



**Consumer Federation of America**

1620 I Street, N.W., Suite 200 \* Washington, DC 20006

**ENDING AMERICA'S OIL ADDICTION:**

**A QUARTERLY REPORT ON  
CONSUMPTION, PRICES AND IMPORTS  
FIRST QUARTER, 2008**

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**APRIL 2008**

## PURPOSE OF THE QUARTERLY REPORT

For the past several years, the Consumer Federation of America (CFA) has actively supported increased fuel economy standards. Our analysis shows that higher fuel economy is good for consumers, the nation, and the environment.<sup>1</sup> The enactment of the Energy Independence and Security Act of 2007 (EISA), which set the goal of increasing the fuel economy of new cars and light trucks by approximately 40 percent to 35 miles per gallon (mpg) by 2020, is a necessary step in the right direction. But it is only the first of many steps required to achieve the reductions in gasoline consumption necessary to protect consumers' pocketbooks, reduce the impacts of global warming, and alleviate risks to national security posed by our addiction to oil.

While EISA sets an important goal, it does not guarantee we will achieve it. First, the National Highway Traffic Safety Administration (NHTSA),<sup>2</sup> which is responsible for setting the incremental standards between now and 2020, must do so in a manner that ensures steady progress toward the goal. Second, consumers have to buy the more fuel-efficient cars that actually get better mileage. If the agency sets lax goals and consumers do not migrate toward more fuel-efficient cars, then the auto manufacturers will put pressure on the Congress to lower the standards. This has happened before, in the 1990s.

Thus, the public mobilization that drove Congress to enact this landmark legislation must be maintained as the new rules are written and new vehicles roll off the assembly line. To help sustain that vigilance, CFA is launching this quarterly report on what President Bush called our national "oil addiction." The goal is to both remind the public and policy makers what is at stake and to measure whether or not progress is truly being made.

Gasoline consumption imposes huge economic, environmental, and national security costs on the nation. Our quarterly report provides key indicators of these costs:<sup>3</sup>

- Expenditures on gasoline is an indicator of consumer costs;
- Quantity of gasoline consumed is an indicator of greenhouse gas emissions;
- Oil imports are a measure of national security vulnerability.

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<sup>1</sup> Mark Cooper, *50 by 2030 Why \$3.00 Gasoline Makes the 50 MPG Car Feasible, Affordable and Economic* (May 2006), available at [http://www.consumerfed.org/pdfs/50\\_by\\_2030.pdf](http://www.consumerfed.org/pdfs/50_by_2030.pdf); *A Blueprint for Energy Security: Addressing Consumer Concerns About Gasoline Prices and Supplies by Reducing Consumption and Import* (May 2006) available at [http://www.consumerfed.org/pdfs/Energy\\_Blueprint.pdf](http://www.consumerfed.org/pdfs/Energy_Blueprint.pdf); Mark Cooper, *Too Little, Too Late: Why The Auto Industry Proposal To Go Low And Slow On Fuel Economy Improvements Is Not In The Consumer Or National Interest* (Consumer Federation of America, July 2007) available at [http://www.consumerfed.org/pdfs/Auto\\_Industry\\_Proposal.pdf](http://www.consumerfed.org/pdfs/Auto_Industry_Proposal.pdf); Mark Cooper, *Technology, Cost and Timing: An Analysis of Competing Congressional Proposals to Raise Fuel Economy Standards* (Washington, D.C.: Consumer Federation of America, July 2007) available at [http://www.consumerfed.org/pdfs/Technology\\_Cost\\_Timing.pdf](http://www.consumerfed.org/pdfs/Technology_Cost_Timing.pdf);

<sup>2</sup> See Mark Cooper, *A Consumer Pocketbook and National Cost Benefit Analysis of "10-in-10,"* (June 2007), for analysis of some of NHTSA's problems, available at [http://www.consumerfed.org/pdfs/CFA\\_Cost-Benefit\\_Analysis\\_of\\_10\\_in\\_10\\_June\\_07.pdf](http://www.consumerfed.org/pdfs/CFA_Cost-Benefit_Analysis_of_10_in_10_June_07.pdf); *A Step Toward A Brighter Future: Policymakers Break the log Jam, But Vigorous Implementation is Crucial* (December 2007), available at [http://www.consumerfed.org/pdfs/Brighter\\_Energy\\_Future\\_12-18-07.pdf](http://www.consumerfed.org/pdfs/Brighter_Energy_Future_12-18-07.pdf).

<sup>3</sup> Data for these analyses are from the Energy Information Administration database, available at [www.eia.doe.gov](http://www.eia.doe.gov). Where monthly numbers are not yet available, four-week averages are used.

This inaugural quarterly report provides historical context by examining long term trends for each major indicator, presented as quarterly results over long periods (20 to 50 years). The long term trends are clear despite strong seasonal patterns of gasoline consumption and expenditures. These trends provide lessons about past behavior that are important to understand in order to achieve the goal of 35 mpg by 2020.

This quarterly report also presents the results for the first quarter of 2008, and future reports will focus on each quarter separately. Comparing same quarter results over time eliminates seasonal variation. Thus, the following exhibits show the first quarter for each year going back to 1990.<sup>4</sup> The winter/spring quarter has traditionally been a period of slack demand for gasoline and moderating prices, although the latter is not the case this year.<sup>5</sup>

The analysis of trends in consumption and price reflects a complex set of factors that affect consumption patterns. A key determinant of the future effectiveness of policies to reduce gasoline consumption is consumer attitudes. What consumers believe about the energy situation and how it affects them strongly influences their behaviors. Over the past several years, CFA has charted consumer responses to critical questions, such as their perception of future gasoline prices, concern about the impact of oil consumption on national security and the environment, and their response or intended response to gas price and fuel economy changes.<sup>6</sup> CFA will continue to survey and chart consumer attitudes about these issues across time.

This report also examines the factors that affect the fuel economy of the vehicle fleet and the influence of fuel economy on consumer vehicle purchases. This is an obvious place to start as the critical challenge is, ultimately, to get automakers to make and consumers to buy more fuel-efficient vehicles.

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<sup>4</sup> This report uses 1990 as the starting date for current analysis because that was the year in which Clean Air Act Amendments affecting the refining industry were enacted. Although the Amendments did not take effect until 1995, the refining industry began its strategic response to the new law in the early 1990s.

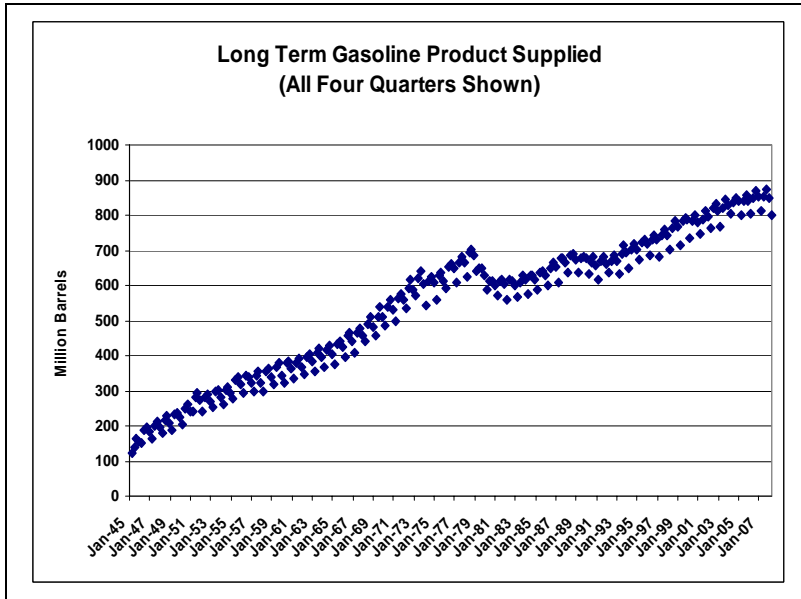
<sup>5</sup> Mark Cooper, *Rising Gasoline Prices: Why Can't Consumers Catch a Break*, March 2008, available at <http://www.consumerfed.org/pdfs/2008gasolineprices.pdf>; Mark Cooper, "The Failure of Federal Authorities to Protect American Energy Consumers from Market Power and Other Abusive Practices," *Loyola Consumer Law Review*, 19:4 (2007) available at [http://www.luc.edu/law/activities/publications/clrdocs/vol19issue4/mark\\_cooper.pdf](http://www.luc.edu/law/activities/publications/clrdocs/vol19issue4/mark_cooper.pdf).

<sup>6</sup> Consumer Federation of America, *Americans Alarmed About Dependence on Oil Imports and Resulting High Gas Prices and Funding Terrorism*, May 1, 2007 available at [http://www.consumerfed.org/pdfs/CFA\\_For\\_Immediate\\_Release052107.pdf](http://www.consumerfed.org/pdfs/CFA_For_Immediate_Release052107.pdf); Consumer Federation of America, *Consumers Still Greatly Concerned About Better Gas Mileage and Oil Imports Despite Falling Gas Prices*, November 13, 2006, available at [http://www.consumerfed.org/pdfs/Gas\\_Mileage\\_Consumer\\_Attitudes\\_Manue\\_Performance\\_Press\\_Release111306.pdf](http://www.consumerfed.org/pdfs/Gas_Mileage_Consumer_Attitudes_Manue_Performance_Press_Release111306.pdf); Consumer Federation of America, available at <http://www.consumerfed.org/pdfs/GasPricesRelease090105.pdf>

## TRENDS IN CONSUMPTION, EXPENDITURES AND IMPORTS

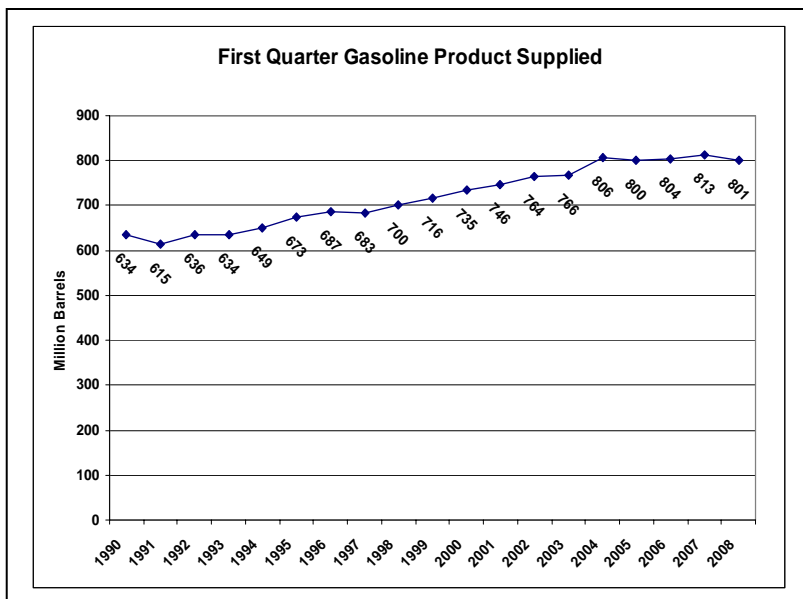
### GASOLINE PRODUCT SUPPLIED<sup>7</sup>

The long term trend in gasoline consumption has four dates of interest: 1973, 1979, 1992, and 2004. After 1973, there is a slight shift downward when the Arab oil embargo occurred. The Iranian revolution in 1979 shows a much larger shift downward. And, while



growth in consumption occurred after this one-time adjustment, it was much slower than before, even though gas prices declined somewhat. We suggest that this trend in consumption reflects the passage of Corporate Average Fuel Economy standards (CAFE) in 1975, which required automakers to double the fuel economy of their cars. When CAFE requirements stopped increasing, consumption of gasoline

took off again as is evident in the upward trend after 1992. Since gasoline prices were stable and relatively low, auto manufacturers had no incentive to improve fuel economy on their own.



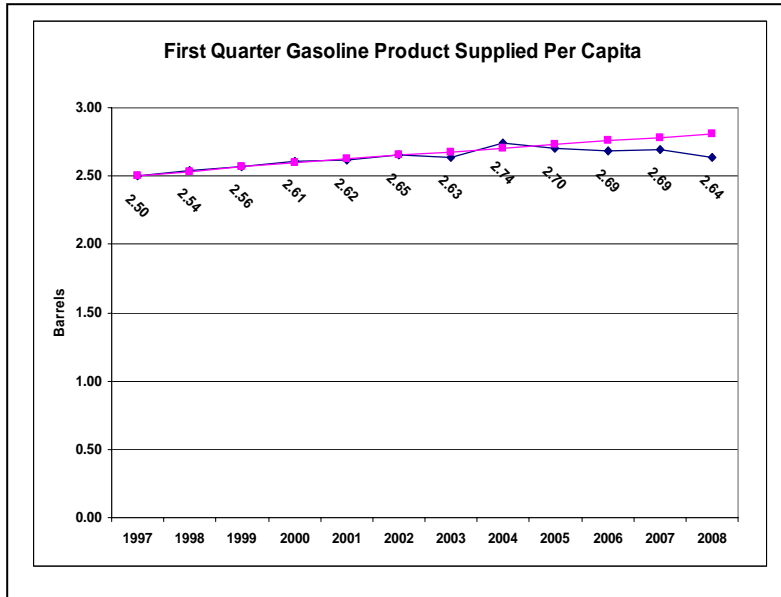
The fourth point of interest is the trend since 2004 when the growth rate of gasoline consumption has flattened and begun to decrease. This is most apparent in the “First Quarter Gasoline Product Supplied” graph. The quantity of gasoline supplied in the first quarter has been just about flat since 2004. And in the first quarter of this year, we have seen an actual decline in the level of

<sup>7</sup> The product supplied is generally equal to the amount consumed (plus minor adjustments in inventories).

gasoline supplied, which generated considerable interest and analysis.

The change in trends since 2004 becomes quite apparent if we look at the past decade and add in the factor of population growth. Calculating gasoline consumption per capita, gasoline consumption is down by 6 percent, compared to what would have been predicted based on the growth of consumption in 1997-2004.

The product supplied or gasoline consumed is a critical indicator of greenhouse gas emissions. Carbon dioxide (CO<sub>2</sub>) is the most significant greenhouse gas, accounting for about 85 percent of total U.S. emissions.

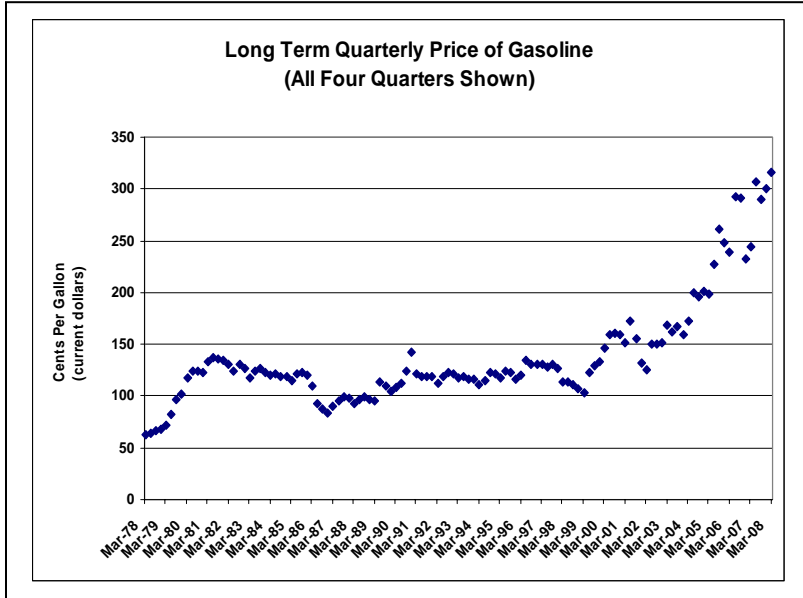


Automobiles emit approximately 19.4 pounds of CO<sub>2</sub> for every gallon of gasoline consumed. Moreover, the extraction, refining, and distribution of gasoline cause additional emissions, so the total amount of CO<sub>2</sub> emitted per gallon consumed is about 23.9 pounds. Thus, in the first quarter of 2007, U.S. consumption of gasoline, which was more than 800 million barrels, or 34 billion

gallons, resulted in about 400 million tons of CO<sub>2</sub> emitted into the atmosphere. The reduction in the growth of consumption that began in 2005 indicates a substantial lowering – as much as five percent -- of consumption by 2008, which equals a reduction of more than 25 million tons of CO<sub>2</sub> in the first quarter that otherwise would have been released into the atmosphere.

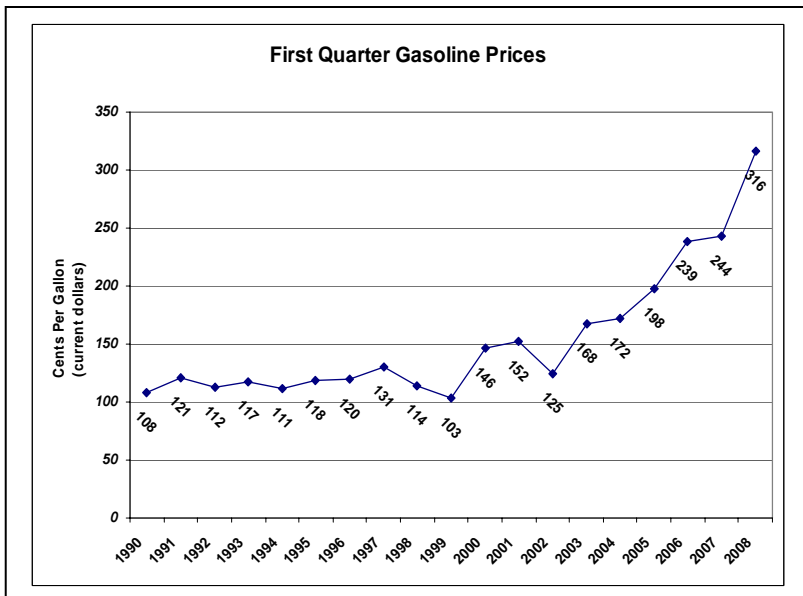
## GASOLINE PRICES

The sharp run-up in gasoline prices over the last six years is in part responsible for the recent downturn in gasoline consumption. The price shock associated with the Iranian revolution in 1979 was about \$.75 per gallon, or almost 120 percent. Prices remained stable



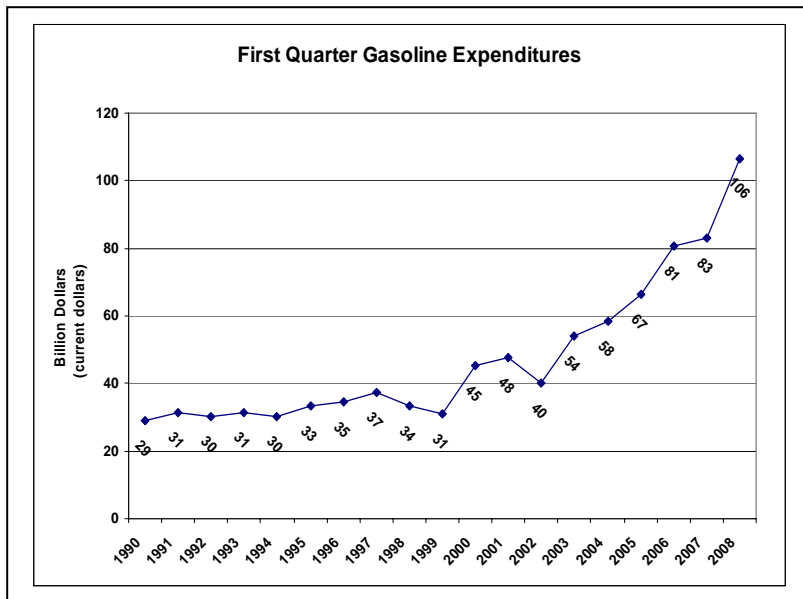
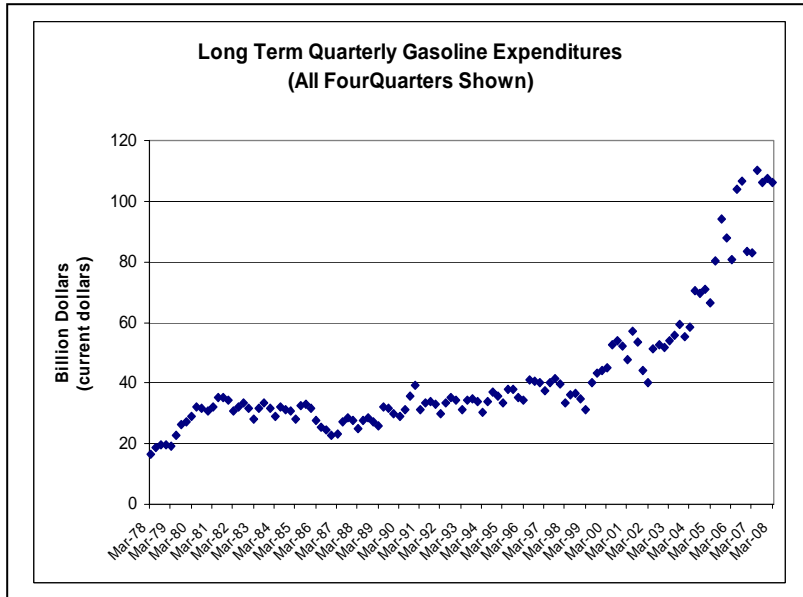
for several years and then declined a few years later. (Yet, as explained above, the rate of growth of gasoline consumption moderated. Recall that the lower rate of growth of gasoline consumption persisted, which we contend demonstrates the impact of CAFE.) The increase in gasoline prices since 2002 rivals the Iranian Revolution price shock, though this time, prices have continued to rise over a longer period of

time. The price today is over 150 percent higher than in 2002, with an increase of almost \$2.00 per gallon.



## GASOLINE EXPENDITURES

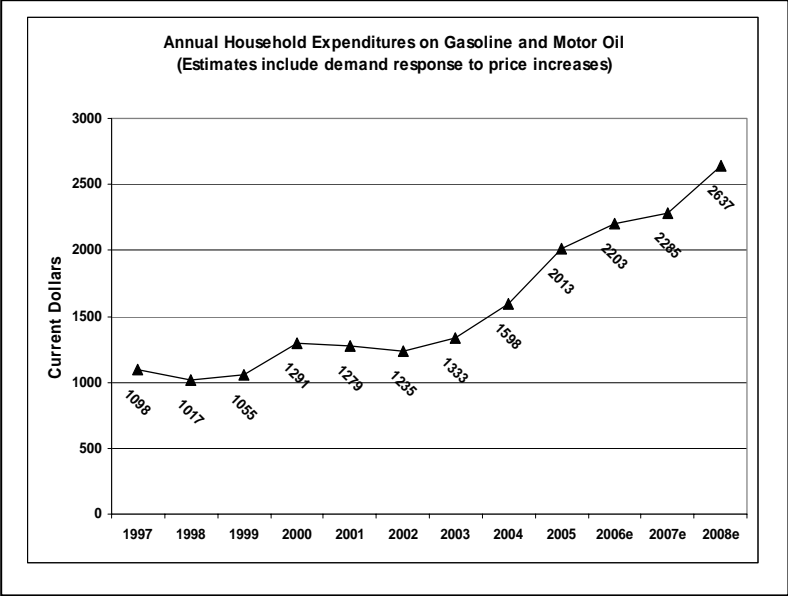
Rising prices have driven total annual gasoline expenditures through the roof, climbing from \$40 billion in the first quarter of 2002 to more than \$100 billion in the first quarter of 2008. This



increase in expenditures averages almost \$350 per household in direct gasoline expenditures per quarter and the equivalent of another \$250 per household of indirect expenditures. Consumers are unable to cut back on gasoline expenditures even though prices are rising sharply for a number of reasons, e. g. residential housing patterns that create long commutes and frequent auto trips for shopping and daily activities; lack of fuel-efficient vehicles, and scarcity of alternative transportation. Because consumers cannot easily cut back on their consumption, the increase in price causes expenditures on gasoline to take a larger and larger share of household budgets.

Data on household expenditures is available from the Bureau of Labor

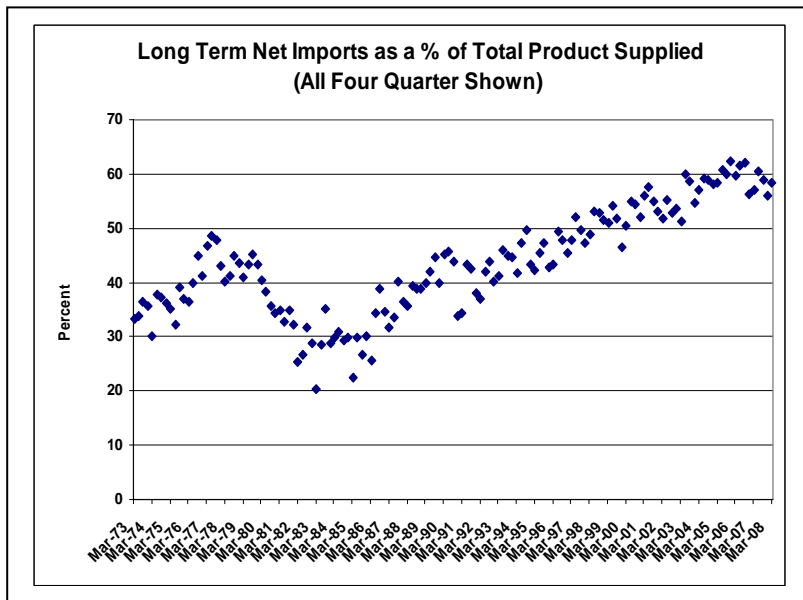
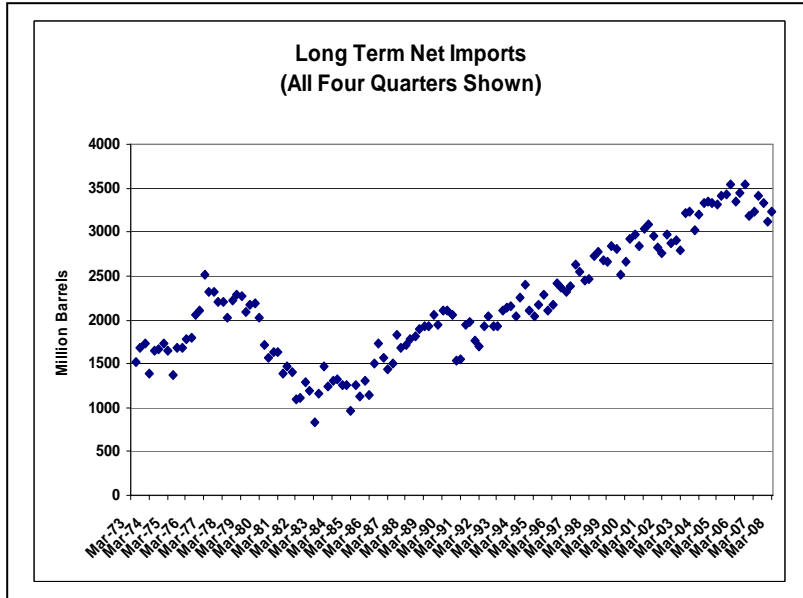
Statistics for 1997 through 2005. As the figure on the following page shows, since the late 1990s household expenditures on gasoline and motor increased by 2.5 times. Since 2002 alone, household expenditures have more than doubled. The estimates of household expenditures include the response to price increases described later in this report.





## NET IMPORTS

Only 3 percent of the world oil reserves are located in the United States, but the U.S. consumes more than 25 percent of the world's petroleum products. Because the U.S. simply does not have the crude oil resources to keep up with rising gasoline consumption, oil



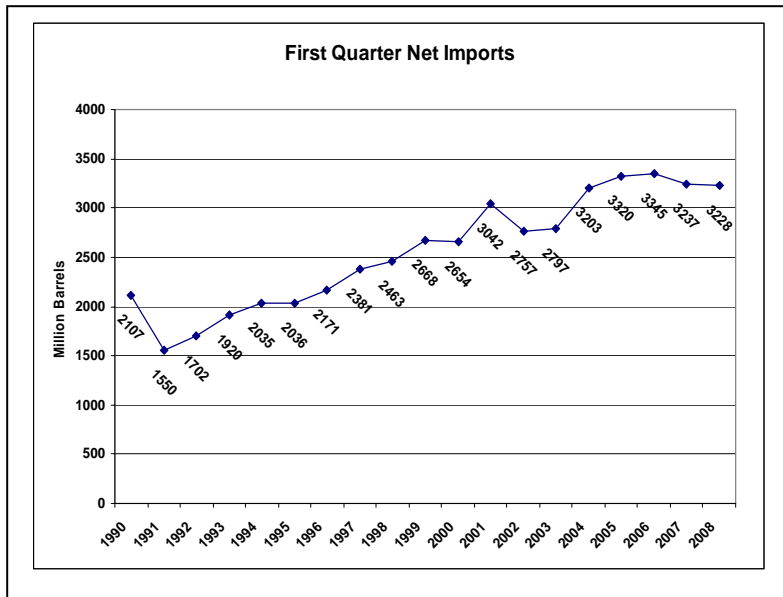
imports have skyrocketed. Gasoline accounts for about 40 percent of all petroleum products supplied to U.S. consumers, and when all vehicle fuels are included, that share increases to about 50 percent. This consumption drives the demand for imported crude oil and refined products. In fact, in recent years, the import of gasoline has more than doubled.

There are two important ways to look at imports– the absolute level of imports and imports as a percentage of total product supplied. The trend in imports tells a story similar to the gasoline consumption patterns described earlier. Imports declined in response to the Iranian price shock (as a result of both production increases and easing demand growth). Imports held steady through the 1980s but began a relentless march upward in

the 1990s. The huge increase in imports creates a drag on the economy, as hundreds of billions of dollars are exported, and a threat to security as nations that are hostile to our national interests are enriched.

The increase in our dependence on imports can be seen in the calculation of the percentage of total product supplied that is imported, either as crude oil or as refined

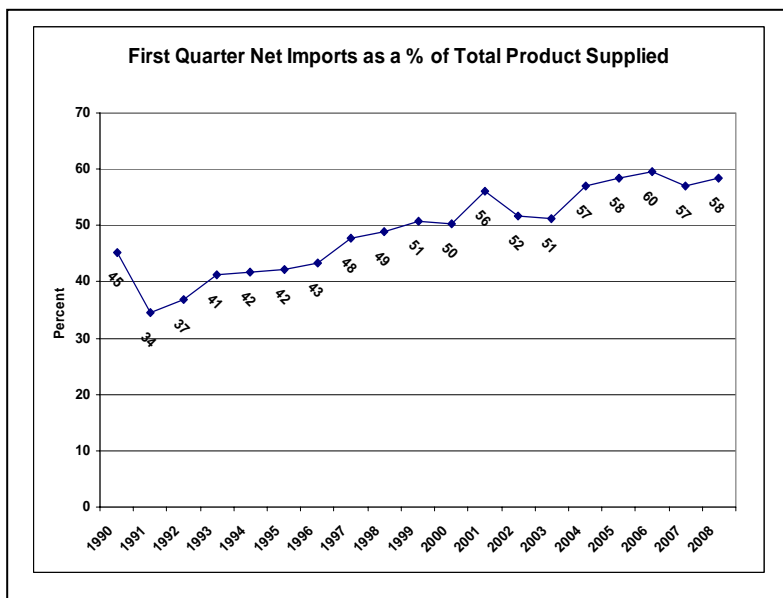
product. From an average of about 25 percent in the 1980s, imports grew to about 60 percent of our total product supplied at the start of the 21<sup>st</sup> century. We are utterly dependent on imports to meet our needs, which is quite apparent in the first quarter statistics.



There is an indication that import growth has moderated in the last few quarters. This likely reflects a combination of easing demand growth and increasing supply, except that unlike in the 1980s when the increase in supply was domestic crude, this time, biofuels appear to be playing a role on the supply-side.

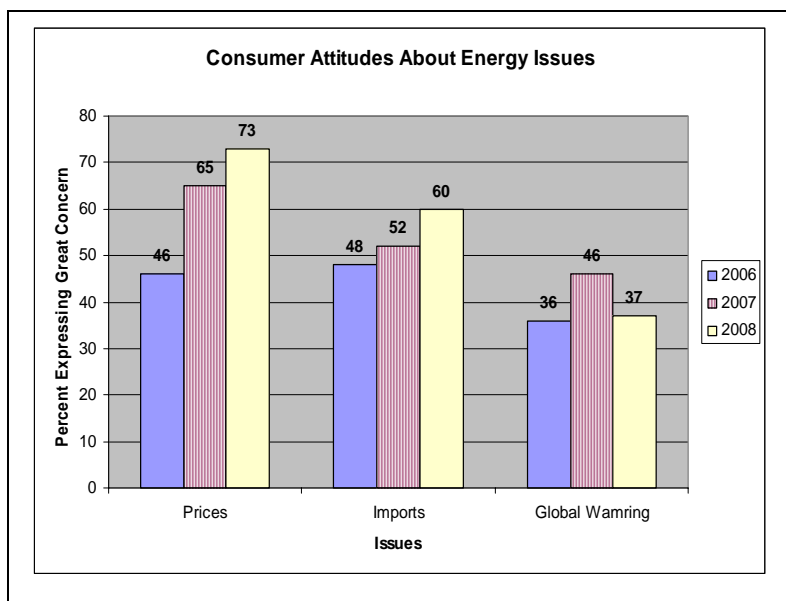
In analyzing both the overall gasoline consumption and the historical trends for

imports, we observe a troubling pattern that should inform efforts to achieve the long-term goal of reducing national oil consumption. In both cases, history reveals short-term consumption shifts after price shocks that then return to higher growth rates. It will be critically important to avoid this pattern in the future if we are to achieve the ultimate goal of 35 mpg by 2020. In the 1980s, strong CAFE standards ensured improving fuel economy and moderating growth of gasoline consumption despite steady gasoline prices. In the coming decade, stringent CAFE rules can help ensure the same result.

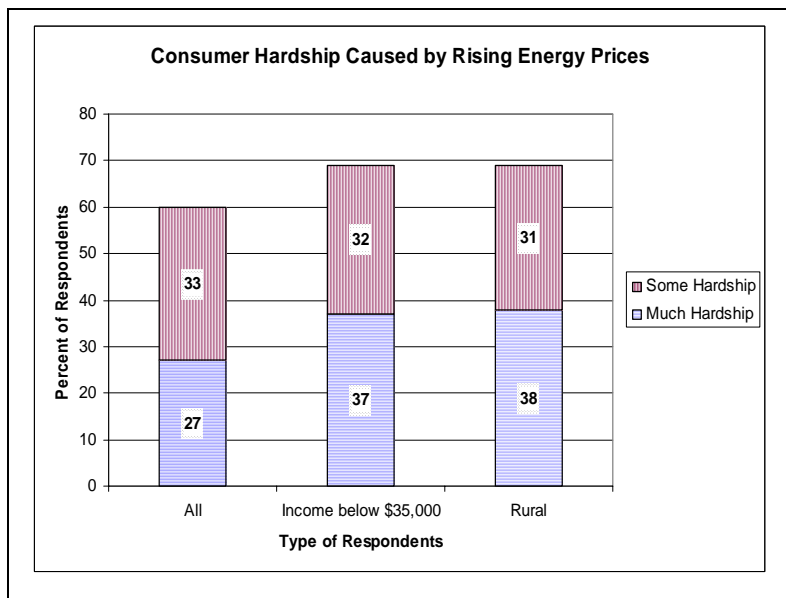


## CONSUMER ATTITUDES

Over the past 18 months, on three occasions CFA commissioned surveys by the Opinion Research Corporation (ORC) of a representative sample of more than 1000 adult Americans on energy issues.<sup>8</sup> During this period, the surveys revealed that Americans'



concerns about gas prices and oil import dependency dramatically increased. In response to the question – “Thinking about the next five years, how concerned personally are you about gasoline prices, U.S. dependency on Mid Eastern oil, and global warming?” -- the proportion expressing "great concern" (5 on a 5-point scale) about gas prices rose 27 percentage points to 73 percent, and the proportion expressing great concern about oil import dependency rose 12 percentage points to 60 percent.

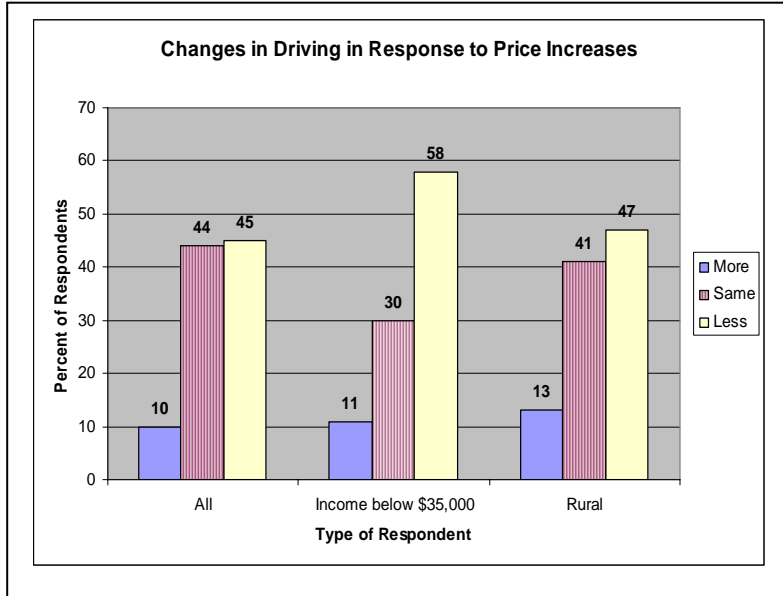


Thus, it is not surprising that most Americans surveyed recently said that gasoline costs have imposed financial hardship on them or their families. Earlier this month, in response to the ORC survey, three-fifths of respondents (60 percent) indicated that rising gasoline prices had caused them much or some hardship, with

27 percent reporting much hardship. Sixty-nine percent of those with incomes below

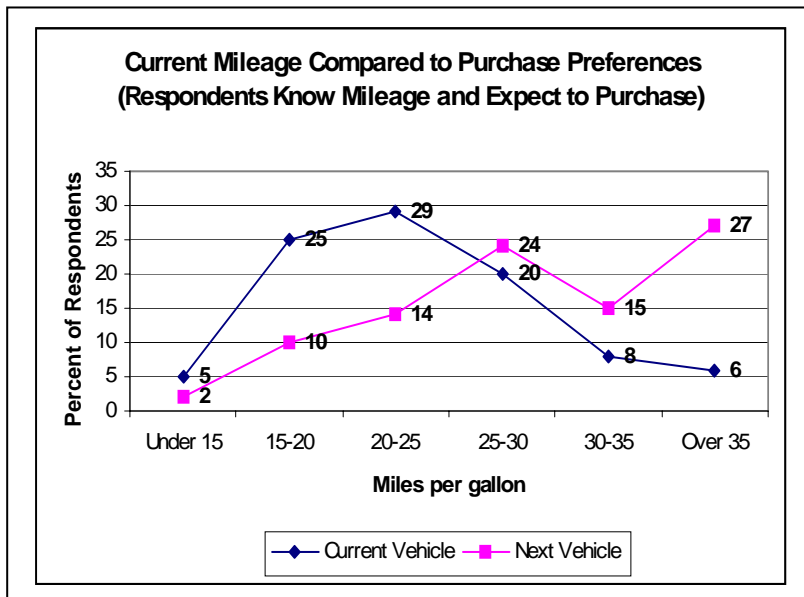
<sup>8</sup> The recent CFA survey of 1,004 representative Americans was conducted by Opinion Research Corporation (ORC) during the first week of April. Earlier CFA surveys were conducted by ORC in July 2007 and October 2006. The margin of error in all surveys is plus or minus three percentage points.

\$35,000 reported much or some hardship, with 37 percent indicating much hardship. And 69 percent of those outside metropolitan areas reported much or some hardship, with 38 percent indicating much hardship.



The most recent survey also helped reveal how Americans are responding to this hardship. When asked earlier this month whether they were driving more or less than a year ago, 45 percent of respondents said less, and only 10 percent said more. Lower income households were more likely to say that they were driving less (58 percent compared to 45 percent for all respondents).

But even more significant is a comparison between the mileage of the vehicles consumers currently own and the mileage they would like to get from their next vehicle. Americans said they planned to increase the gas mileage of the next vehicles they purchase, compared to those they currently drive, by nearly 7 miles per gallon (from a median for current vehicles of 23.6 to 30.4). Forty-two percent say they intend to purchase vehicles with an average mileage over thirty miles per gallon, but only 14 percent say that is the mileage that their current vehicles get.



Twenty-seven percent said they intend to purchase a vehicle that gets more than 35 mpg, whereas only 6 percent say they currently own a vehicle that gets that level of mileage.

## CHANGES IN CONSUMER BEHAVIOR IN GASOLINE AND AUTO MARKETS

A recent Congressional Budget Office Study<sup>9</sup> (CBO) explores a question posed by and confirms the findings of our quarterly reports. What are the effects of high prices on consumption patterns? After four years of rising prices (2002-06), CBO found that when gasoline prices rise significantly, people will:

- Use less gasoline;
- Drive less if they can;
- Drive more slowly;
- Use mass transit where it is available, and
- Buy more fuel-efficient cars, if they can find them.

Much of our analysis of consumption, prices, and expenditures is consistent with the CBO findings. We saw very large increases in prices and expenditures and recently, very modest declines in consumption.

The formal expression of this relationship in economic analysis is the price elasticity of demand. How much does a particular behavior change in response to a price change? The price elasticity of demand is usually calculated in percentages. A one percentage point increase in prices that results in a one percentage decline in the behavior is said to be an elasticity of -1 ( $-.01/+.01 = -1$ ). CBO studied a variety of behaviors and calculated the elasticity of demand – the percentage change in a particular behavior in response to a change in gasoline prices.

In one sense, these results are encouraging from the point of view of ending the nation's oil dependence. People behave rationally in response to rising gasoline prices. Unfortunately, all of the effects are quite small. As the following exhibit shows, the short-run elasticities are considerably less than -.1. A one percent increase in price leads to a reduction in consumption or changes in behavior that reduce consumption of less than one-tenth of one percent. In the long run, the elasticities are somewhat higher -.2 to -.4, but still quite low compared to other commodities. Moreover, the elasticity of demand has declined over time and is likely to continue to do so.

*For a variety of reasons, consumers are currently only about one-fifth as responsive to short-run changes in gasoline prices as they were several decades ago. That decline in sensitivity has been attributed to growth in real income, which has rendered gasoline a smaller share of consumers' purchases from disposable income. Price sensitivity has also declined because a gallon of gasoline takes a car farther than it did in the past, in part because of fuel economy standards. The development of distant suburbs also has contributed by making consumers more reliant on the automobile. The longer commutes are balanced by lower housing costs.<sup>10</sup>*

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<sup>9</sup> Congressional Budget Office, *Effects of Gasoline Prices on Driving Behavior and Vehicle Markets*, January 2008.

<sup>10</sup> CBO, *Effects of Gasoline Prices*, pp. x-xi.

Another factor in consumer response to gas prices is the pattern of price run-up, which must be sustained to induce change. The latest run-up of gas prices has far exceeded any previous price spike, but it has unfolded over a longer period of time. The impact on vehicle sales is beginning to be seen.

PRICE ELASTICITIES OF DEMAND FOR VARIOUS GASOLINE CONSUMPTION-RELATED BEHAVIORS COMPARED TO SELECTED OTHER PRODUCTS			
Product	Study Trait	Period of Impact	
		Short-terms	Long-term
Gasoline Related <sup>a</sup> Consumption	CFA (1997-2005 Expenditures)		-.28
	Recent	-.06	-.40
	1994-2006	-.02 to -.04	
	Higher prices	-.066 to -.074	
	1974-1989	-.05 to -.08	
	Older		-.38 to -.43
Travel Speed	CBO	-.06	
	Recent	-.05	
Miles Traveled	Older		-.35
	CBO	-.035	
	Recent	-.02 to -.03	-.11 to -.15
New Vehicle Fuel Economy (improvement)	Older	-.1 to -.16	-.26 to -.31
	CBO truck-car		
	Switch to cars	.28	
Other Commodities <sup>b</sup>	CFA Implicit mpg	.1	
	CFA	.1	
Eggs			-.1
Gasoline			-.2
Shoes			-.9
Foreign Travel			-1.2
Alcoholic Beverages			-1.5
Jewelry			-2.6

a) Congressional Budget Office, *Effects of Gasoline Prices on Driving Behavior and Vehicle Markets* (Washington, D.C.: January 2008).  
b) Jon B. Taylor, *Economics* (Boston: Houghton Mifflin, 1998), p. 99.

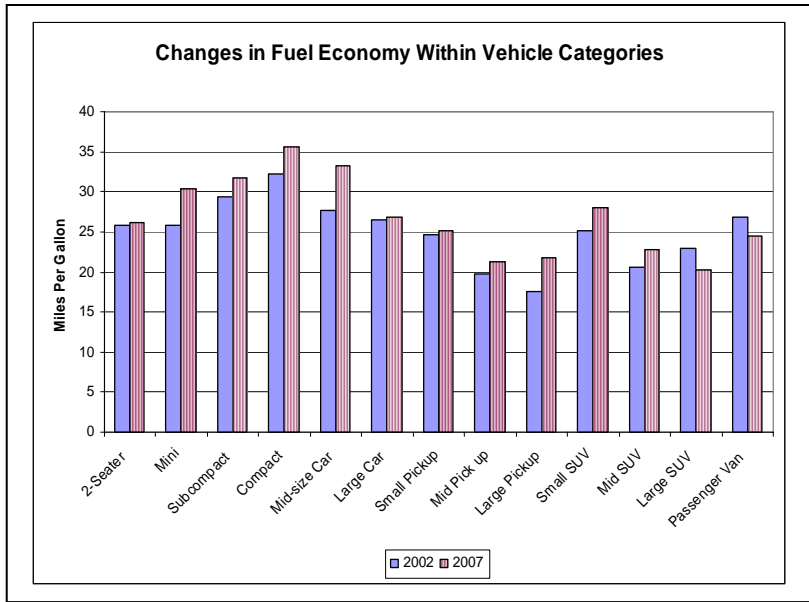
To track the trends in vehicle fuel economy, the CBO relied on Environmental Protection Agency (EPA) mileage estimates and auto sales from *Automotive News*. CFA compiled a database on fuel economy and sales using NHTSA data.<sup>11</sup> Our analysis includes more recent data than was used by the CBO, allowing us to extend some analyses to 2007 with preliminary sales data. We find similar patterns of shifts to more fuel-efficient vehicles in consumer purchasing behavior, and with these data, we can explore some important aspects of the automotive market in greater detail.

As gasoline prices rise, people switch from less fuel-efficient trucks to cars. As the CBO noted, “Price spikes in the spring of 2005, in October 2005 (after Hurricane Katrina), and in the spring of 2006 all coincided with sharp increases in the new-car market share. Market shares for leading categories of light trucks – especially SUVs – went the opposite way, dipping as gasoline prices rose.”<sup>12</sup> In our data, with annual sales, the shift is 2.3 percent. Applying the shift coefficient calculated by CBO to the average difference between cars and trucks in our data, we find that the switch results in an improvement of fuel economy of about .1 percent for every 1 percent increase in gasoline prices. We arrive at a similar estimate by calculating the change in the fleet average fuel economy compared to the average real price of gasoline.

<sup>11</sup> Jack Gillis and Mark Cooper, *Still Stuck in Neutral: America’s Continued Failure to Improve Motor Vehicle Fuel Efficiency: 1996:2005*, July, 2007, available at [http://www.consumerfed.org/pdfs/Still\\_Stuck.pdf](http://www.consumerfed.org/pdfs/Still_Stuck.pdf); Jack Gillis, *Stuck in Neutral: America’s Failure to Improve Motor Vehicle Fuel Efficiency: 1996-2005*, November 2006; available at [http://www.consumerfed.org/pdfs/Stuck\\_in\\_Neutral.pdf](http://www.consumerfed.org/pdfs/Stuck_in_Neutral.pdf).

<sup>12</sup> CBO, *Effects of Gasoline Prices*, p. 16.

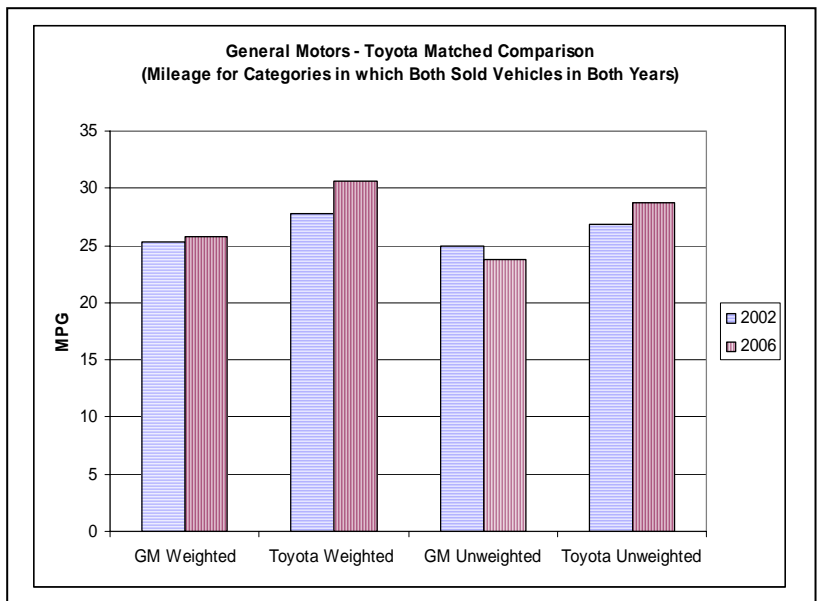
One of the key findings of the CBO study is that fuel economy improved both because consumers shifted their purchases away from less fuel-efficient types of



vehicles (trucks and large SUVs) and because “the average fuel economy of cars and light trucks alike have been increasing since 2002.”<sup>13</sup> Our data shows that the overall improvement in fuel economy was just under one mile per gallon (for 2002-2006) and 2 miler per gallon for

2002-2007; much less than consumers now say they want (7 mpg). And, the improvement in the fuel economy within the individual categories of cars and light trucks is uneven. The largest improvements came in minis, compacts, and mid-sized cars. Passenger vans and large SUVs did not improve. While many consumers shifted to smaller more fuel-efficient vehicles, those who required larger vehicles could not find the fuel- efficiency they needed and wanted.

Fuel economy improvement was also very uneven across auto manufacturers. One



of the more dramatic aspects of the past half-decade has been the competition between General Motors (GM) and Toyota for the top spot as the leader in sales in the American auto market. The following figure shows the average fuel economy for GM and Toyota based only on categories of cars in which both had sales in 2002 and 2007. This graph matches the two automakers by categories of product sold for which

<sup>13</sup>CBO, Effects of Gasoline Prices, p. 20.

they compete head-to-head. It shows both the sales-weighted average fuel economy (mpg) and the unweighted average of the individual models they marketed. For Toyota, both the weighted and unweighted fuel economy averages improved. Toyota's mileage improved both because consumers shifted their purchases to more fuel-efficient categories of vehicles and Toyota offered, on average, significantly more fuel-efficient models. GM's average fuel economy improved because consumers shifted their sales between categories, but GM did not offer, on average, a significantly more fuel-efficient slate of models.

**LINEAR REGRESSIONS TO EXAMINE FACTORS AFFECTING FUEL ECONOMY UNIT OF ANALYSIS IS THE SALES WEIGHTED MODEL (Regression Coefficients, All Statistically Significant at the .001 level)**

Variable	Cars		Trucks	
	Fuel Economy	Product Sales	Fuel Economy	Product Sales
2003	.0662	15456	.982	10120
2004	1.084	-148	.482	-5090
2005	1.758	16763	.869	-16488
2006	2.377	3936	.879	-24092
Fuel Economy	na	945	na	823
R <sup>2</sup>	.56	.32	.24	.12

Control variables: Engine (Horse Power, Displacement, Cylinders), Body (weight, Wheel base, interior volume); Transmission type, Drive Ratio, Dynamometer Setting; all coefficients are significant at the .05 level or higher

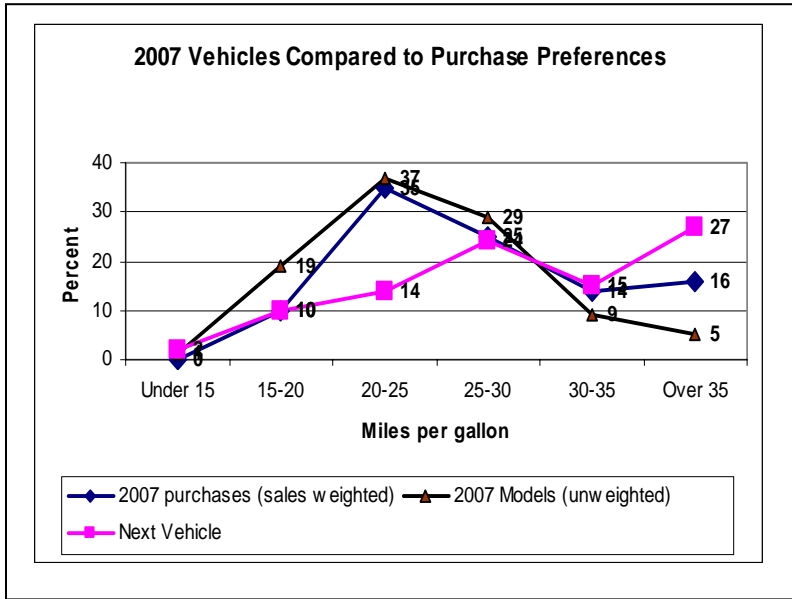
We were able to test the proposition that fuel economy became more important to consumers over the period since 2002 with an econometric model of fuel economy. After controlling for the key vehicle characteristics that affect fuel economy (vehicle weight, engine traits like horsepower, displacement, number of cylinders, transmission type, drive ratio, dynamometer setting, wheel base, interior volume), each year after 2002, there was a statistically significant, though small, improvement in the fuel economy of cars. For cars, the effect became steadily larger over time. A car sold in 2006 got 2.377 more miles per gallon than one built in

2002, controlling for all the other factors included; for trucks, the increase was .879 miles per gallon.

Truck sales were down 24,092 in 2006, compared to 2002; controlling for all the other factors, car sales were up 3,936. For trucks, the effect was large in 2003, declined in 2004 and rebounded in 2005 and 2006. We also find that fuel economy was positively related to product sales. We find the negative effect on truck/SUV sales in 2004, 2005, and 2006, with the effect growing larger over time. This is consistent with the CBO findings. In addition to the shift from trucks to cars and after controlling for all the other factors, a one mile per gallon increase in fuel economy resulted in an additional sale of just under 1000 more cars and trucks for each model.



If we contrast the purchase intentions of consumers with the actual purchases made in 2007, we find that the gap between where consumers are headed and where the market



has been is large for the high mileage vehicles. Only five percent of the models offered in 2007 got 35 miles per gallon or more. However, 16 percent of the vehicles sold had mileage rating above 35 mpg. This is in contrast to the next purchase preferences of 27 percent of respondents who intend to buy vehicles that get over 35 miles per gallon. Consumer purchases are the result of a combination of what they want and what they are offered. This

analysis suggests that the automakers need to offer them a broader set of higher fuel economy options.

## CONCLUSION

This first quarterly report on gasoline consumption, expenditures, oil imports, and consumer attitudes contains both good and bad news about progress toward rapidly reducing our nation's addiction to oil. People care greatly about gasoline price increases and the national security implications of our oil dependency. And, they respond to the extent they can. But thus far, the impact on gasoline consumption has been small, in part, because consumers have not had enough fuel-efficient choices. They are and will be looking for cars that get much better gas mileage than their current vehicle, and than most auto makers are supplying. We see evidence of this in the aggregate measures of consumption, responses to national opinion polls, and detailed analysis of vehicle purchasing patterns.

Our nation has experienced three serious gasoline price shocks since 1973. The only spike that caused a sharp and long decline in gasoline consumption occurred after Congress mandated more fuel-efficient vehicles. Without a strong policy signal that requires automakers to continue to increase the fuel economy of their fleets, consumers can do little to moderate their gasoline consumption, even as the price skyrockets.

We are at a critical moment in national history. The combined threats of oil dependency and global warming require serious and sustained improvement of vehicle fuel economy. Margo Oge, EPA Director of Transportation and Air Quality said recently that vehicles may have to reach 75 mpg by 2030 if we are to prevent the worst impacts of climate change. National policies that push automakers, consumers, and the market in the direction of greater fuel economy are necessary to move society toward the goal of reduced oil consumption. Rapidly and significantly increasing fleet-wide fuel economy is essential for our economy, the environment, and our national security.